

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/290,777	04/13/99	STUTSMAN	D 20153
		QMI2/1201	<input type="checkbox"/> EXAMINER ERGENBRIGHT, E
			<input type="checkbox"/> ART UNIT 3722
			<input type="checkbox"/> PAPER NUMBER 4
DATE MAILED: 12/01/00			

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)
	09/290,777	STUTSMAN, DAVID
Examiner	Art Unit	
	Erica D. Ergenbright	3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1) Responsive to communication(s) filed on 20 September 2000.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1 and 3-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 and 3-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
a) All b) Some * c) None of the CERTIFIED copies of the priority documents have been:
1. received.
2. received in Application No. (Series Code / Serial Number) ____.
3. received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

14) Notice of References Cited (PTO-892)
15) Notice of Draftsperson's Patent Drawing Review (PTO-948)
16) Information Disclosure Statement(s) (PTO-1449) Paper No(s)

17) Interview Summary (PTO-413) Paper No(s). _____
18) Notice of Informal Patent Application (PTO-152)
19) Other: _____

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DETAILED ACTION

Faxing of Responses to Office Actions

1. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 305-3579. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Claim Rejections - 35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 3-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. There are several limitations in the claims that lack sufficient antecedent basis. Examples of these limitations are: "said bearing seat" in claims 1, 11, 12 (previously "at least one bearing seat"); "said first sleeve surface" in claim 15 (previously "at least one"); "said second bearing" in claims 16; and "said house" in claim 15.

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5. Throughout the claims, there is no axis provided for determining what is meant by the terms "axial" or "axially". There is no frame of reference provided for determining what is meant by "outwardly facing" in claim 16.

Claim Rejections - 35 USC § 103

6. Claims 1 and 3-20, as best understood, are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 1,761,841 (Nenninger). Nenninger teaches a machine tool spindle 29 (page 1, line 86) that is fixed on one end and allowed to move axially with respect to the rotational axis of the spindle on the other end as the spindle expands and contracts due to variances in temperature (page 2, lines 22-37 and 128-130). The spindle is mounted in a column or housing C (see Figure 1), and is supported with a roller bearing 74 (Figure 5) at one end of the spindle and with bearings 25, 26 (Figure 4) on the opposite end of the spindle. The bearings have inner and outer races (Figures 4 and 5) and are seated against outwardly facing annular surfaces of sleeves 70 and 18, respectively (Figures 4 and 5). The bearing 74 is mounted on the rear of the spindle (page 1, line 62), and floats or axially moves within sleeve 70 (page 2, lines 110-130). Rigid annular sleeve 70 is disposed between bearing 74 and the housing (Figure 5) and is fixed with respect to (or "bonded to") the housing via stud screw 72 (Figure 5 and page 2, lines 114-116). The spindle 29 has a nose 30 that is adapted to engage a cutter arbor or "tool holder" (page 1, column 85-87). As shown in Figure 5, it appears that the bearing seat is slightly oversized with respect to the sleeve 70. Nenninger also specifically teaches that the bearing cone 27 is press fit onto the spindle, and states that the other bearing 74 "floats with the end of the spindle" (page 2, lines 128-129), implying that the bearing 74 is mounted so as to be fixed to the

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spindle and is thus also press fit onto the spindle. Specifically regarding claim 18, element 75 is a spacer sleeve, and the spacing sleeve 75 is located on the spindle axially between the inner races of bearings 74 and 23, 25, 27 (Figures 4 and 5). Specifically regarding claim 19, nut 77 is threaded onto the spindle (Figure 5). Specifically regarding claim 20, cover plate or cap plate 63 is shown in Figures 2 and 4 as engaging the outer bearing race 23. Specifically regarding claim 12, as shown in Figures 4 and 5, it appears that the annular inner surfaces of the openings which seat the sleeves 70 and 18 are of a slightly larger diameter than the outer diameters of the annular outer surfaces of the sleeves 70 and 18. Specifically regarding claim 13, Nenninger does not specifically teach that the diametral difference is in the range between 0.010 and 0.015 inches. Specifically regarding the seating of the bearings, the bearings 74 and 23, 25, 27 are both seated within enlarged portions of their respective sleeves rather than enlarged portions of the housing (see Figures 4 and 5), and abut against outwardly facing annular surfaces of these sleeves. Nenninger does not teach that the sleeves are held in place via an epoxy resin adhesive, but instead teaches the use of stud screw 72 to fix sleeve 70 as described above, and also teaches the use of washer ring 20 in conjunction with bolts 21, and clamp nut 33 with set screw 34 to fix sleeve 18 (see Figure 4). Specifically regarding the enlarged portion of the seat, it is immaterial to the function of Nenninger's invention as to whether the lips or flanges which form the outwardly facing annular surfaces are part of the sleeve, or whether these flanges are separate from the sleeves and are integral with the housing C (which if these flanges are integral with the housing, these flanges form enlarged openings within the housing by virtue of the smaller opening at the radially inner surfaces of the flanges). Therefore, it would have been obvious to

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one having ordinary skill in the art at the time the invention was made to have made the flanged portions of the sleeves integral with the housing, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). Specifically regarding the epoxy resin adhesive, Official Notice is taken that the use of "epoxy resin adhesive" to bond metal to metal and to let this adhesive set was notoriously well known in the art at the time the invention was made. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied epoxy resin adhesive (rather than the fixing arrangement described by Nenninger) to one or both of the outer surface of the fixed sleeves 70 and 18 taught by Nenninger, or the inner surface of the housing taught by Nenninger, to fix the sleeves with respect to the housing, and to have let this adhesive set. Specifically regarding claim 13, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the inner annular surface of the housing as much larger than the outer surface of the sleeve as was desired or expedient, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments filed September 20, 2000 have been fully considered but they are not persuasive.
8. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., on page 13,

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first paragraph, and pages 14-15 of applicant's amendment filed September 20, 2000, applicant is arguing specific limitations of the types of bearings used, when all applicant is claiming is a generic "bearing") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. Regarding applicant's assertion that "an adhesive is not an obvious substitute of a stud screw as purported by the Office", applicant's attention is directed to the Machinery's Handbook, 25th ed., 1996, pages 2378 and 2379, which is provided by the Office as a teaching reference that the use of adhesives, particularly of epoxy resin adhesives, and the benefits and advantages thereof, are notoriously well-known in the art of fastening. Note also that the Machinery's Handbook teaches that appropriate curing parameters are essential when using an adhesive, which curing is equivalent to the claimed "setting" of the adhesive. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The Machinery's Handbook teaching provides evidence that the use of the epoxy resin adhesive, the benefits thereof over other mechanical fastening devices, and the curing of this adhesive are all things that would be within the level of ordinary skill in the art.

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10. Specifically regarding applicant's assertions that the Nenninger reference does not teach the steps of the method claim 15, applicant's attention is directed to the above rejection of claim 15. It is unclear which steps that applicant is arguing that Nenninger does not teach. For example, claim 15 claims "mounting said spindle on one of an inner race and an outer race of a first bearing". Nenninger teaches a first bearing that is mounted on a spindle as described above, and therefore, the step of "mounting" as claimed by applicant had to have occurred to produce Nenninger's invention.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica D. Ergenbright whose telephone number is (703) 308-6395. The examiner can normally be reached on M-F, 7:30 a.m. to 5:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (703) 308-2159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-3579 for regular communications and (703) 308-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

ee

November 29, 2000

A. L. WELLINGTON
SUPERVISOR - ARTIST EXAMINER
TECHNOLOGY CENTER 3700

ATTACHMENT TO AND MODIFICATION OF
NOTICE OF ALLOWABILITY (PTO-37)
(November, 2000)

**NO EXTENSIONS OF TIME ARE PERMITTED TO FILE
CORRECTED OR FORMAL DRAWINGS, OR A SUBSTITUTE
OATH OR DECLARATION**, notwithstanding any indication to the
contrary in the attached Notice of Allowability (PTO-37).

If the following language appears on the attached Notice of Allowability, the
portion lined through below is of no force and effect and is to be ignored¹:

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to
EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to comply will result in
ABANDONMENT of this application. ~~Extensions of time may be obtained under the provisions of 37 CFR 1.136(a)~~

Similar language appearing in any attachments to the Notice of Allowability,
such as in an Examiner's Amendment/Comment or in a Notice of
Draftperson's Patent Drawing Review, PTO-948, is also to be ignored.

¹ The language which is crossed out is contrary to amended 37 CFR 1.85(c) and 1.136. See "Changes to Implement the Patent Business Goals", 65 Fed. Reg. 54603, 54629, 54641, 54670, 54674 (September 8, 2000), 1238 Off. Gaz. Pat. Office 77, 99, 110, 135, 139 (September 19, 2000).